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SUBSISTENCE INDIGENOUS HUNTING IN PAPUA: DOES IT SUSTAINABLE ?

(Perburuan Subsistens di Papua: Apakah Lestari?)

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ABSTRAK

Hewan liar atau satwa di hutan tropis merupakan hasil hutan bukan kayu (HHBK) yang dimanfaatkan melalui aktivitas perburuan sebagai sumber makanan, pendapatan dan memainkan peran yang tidak kalah penting berdasarkan aspek sosial budaya bagi komunitas yang hidup di sekitar hutan. Dalam kaitannya dengan sosial budaya masyarakat setempat, satwa mempunyai hubungan yang sangat erat dengan aspek spiritual dan praktek budaya tradisional misalnya aspek etnozoologi (ethnozoological aspect) atau pemanfaatan obat tradisonal. Artikel ini mereview dan mendiskusikan tentang aktivitas perburuan tradisional yang berkaian dengan kearifan tradisional sebagai bentuk pendekatan konservasi satwa liar di Papua. Hasil penelitian menunjukkan bahwa perburuan satwa dilakukan untuk memenuhi kebutuhan konsumsi keluarga dengan target buruan tertentu, menggunakan peralatan buru tradisional, dilakukan di wilayah yang diijinkan untuk berburu, dan berburu berdasarkan musim. Beberapa faktor yang berhasil diidentifikasi sebagai faktor ancaman serius terhadap kelestarian satwaliar di hutan tropis Papua, antara lain peningkatan populasi penduduk, tersedianya akses ke daerah yang sebelumnya terisolasi, penggunaan alat buru modern dan mulai terkikisnya praktek-praktek tradisional dalam perburuan.

Kata Kunci: subsistens, tradisional, perburuan, lestari, Papua.

INTRODUCTION

Tropical rain forest in West Papua has a wide variety of ecosystems situated from coastal to highland area, which provides a unique and specific habitat and is considered as the harbor of particular wild animals. Such forests are rich in biodiversity (plants and animals), and local communities living in and around those forests are dependent on natural resources afforded.

Forests are one of the most accessible productive resources available to people. They are home to approximately 300 million people who living adjacent to forest areas and depend on shifting cultivation, hunting and gathering for some aspects of their food security (FAO 1996). Forests and the benefits they provide in the form of food and income play an important and often critical role in enabling people around the world to secure a stable and adequate food supply.

Wildlife hunting not only provide nutriton and economic value, to communities, but may offer other forms of income generation (Milner-Gulland *et al*. 2003). Across the humid tropics millions of people rely on wildlife hunting for an alternative source of family revenue. Despite the reality that hunting support low level household's income, in some countries hunting is also the basis of a substantial business (Williamson 2002). The influence of culture has also played a significant role in the case where animal trophies are obtained for cultural artifacts or for personal adornment (Ntiamoa-Baidu 1997; Kwapena, 1984; McKinnon 1984; Beehler 1985; Fa and Brown 2009).

Similar to other inhabitants surrounding the forest area, local communities around the West Papua forests are forest dwellers, rely on the benefits from agriculture, and a wide range of traditional medicines, other hygiene products, hunting and fishing gears. In particular, gathering non-wood forest products (NWFPs) is central to the traditional culture, relationship with nature, recreation and way of life of the indigenous peoples inhabiting the New Guinean Islands.

Even in modern days, some ethnic groups in West Papua depend almost entirely on hunting as a part of their tradition. This paper aimed to present current information on wildlife hunting by Papuan natives. Particularly, main focus of this paper is to document traditional hunting by the natives and relate to sustainable in terms of wildlife conservation in Papua.

HUNTING AND FOOD SECURITY

Utilization of wild animals in Papua was purely done through hunting. Hunting used in this paper includes all capture by humans of wild mammals, birds, and reptiles, whether dead or alive irrespective the techniques to capture them. Hunting by local communities in Papua plays an essential role in traditional life as part of the culture (Pattiselanno and

Mentansan 2010). Currently, the most purpose of hunting is to look for essential protein as food sources, and to gain more economic benefits by selling wild animals and their products (Pattiselanno 2003; Pattiselanno 2006; Pattiselanno 2007; Pattiselanno 2008).

Food security is defined as physical and economic access to food, for all people, at all times, and always concerned with food availability (Hoskins 1990). However, some factors can also influence food security include economic, social status, health, education and cultural background. These factors play an important role in the contribution of wild animals to food security in West Papua.

As food sources, wildlife plays an important role to rural communities around Papua. Limited access to animal protein supplied by domestic livestock, and available food source from wildlife are the major reason to acquire wild animals for consumption. Rao and McGowan (2002) indicated that wild meat contributes significantly to rural communities in Asia, Africa and Latin America because it is more easily accessbile animal protein than cultivated meat, and sometimes are dominance dietary protein available. Therefore, Milner-Gulland *et al.* (2003) summarized from different literatures, estimated annual wild meat harvest was as follows: 23 500 tonnes in Sarawak (Malaysia), 67 000–164 000 tonnes in the Brazilian Amazon and 1 million–3.4 million tonnes in Central Africa, while for the Neotropical and Afrotropical regions, over 5 million tonnes of wild mammal meat was estimated to have supplied meals for millions of people (Fa *et al*. 2000). Pattiselanno (2004) indicated, economically, difficulties to afford animal protein from domesticated meat led people to gather from the nature, and forest based activities also provided great extra income for people.

HUNTING MODALITIES

Hunting in West Papua mostly performed for subsistence purposes, which depended on traditional tools in terms of maintaining a relationship with nature. De Vos (1973) and Ojasti (1996) also acknowledged that subsistence hunting mostly using traditional tools with a major purpose is more on providing essential protein sources meat for family consumption.

The use of forest materials to build traps, arrow and bow, spear and snare to catch wild animals are most commonly found in West Papua. Hunters acknowledged that most of the traditional hunting tools were produced from bamboo, rattan, fiber ropes, and some elastic plants. Paijmans (1976) explained that materials utilized for making traditional tools usually derived from the forest such as *Hibiscus sp., Trema sp., and Ficus spp, Syzigium sp., Aglaia sapindina* and *Dodonea viscose.*

The use of traps were common, and number of traps set along hunting trails were varies in number among different study sites. Rotational control is commonly being performed to check the traps. Traps around farms are inspected daily or as often as the farmer or his family visits the farm. Traps set within the forest are normally inspected every other day.

However, instead of using traditional tools, some tribes also use dogs during the activity. Dogs are commonly used to drive wild animals. Number of dogs varies, but usually more than one are being employed. Some studies conducted in West Papua reported that dog hunter is widely being practiced for hunting activities.

Hunting may be done during the day or at night in the forest or in the secondary growth around farms. Particularly, famer-hunters do hunting while working in the farm. However, night hunting is very common. The hunter leaves his home at late night to hunt and returns back home early morning the following day. They prefer to perform night hunting because of higher success rate is higher than during day time.

Hunting is conducted either individually or in groups. Both systems sometimes are often conducted simultaneously, depending on the purpose of hunting. When people start to open a new garden, relatives or tribes are involved to help one another. To complete the menu 3 to 4 men in-group hunt for meat. Occasionally, a bigger group is set to perform hunting. Group members include more than ten persons and two to three dog hunters.

Individual hunting is often done when either a husband or wife works in the garden. When wife took care of the cash crops, husband usually performed hunts. It is more common, a husband accompanied by hunting dog to assist him in driving the animals. Some often bring dogs or using fire for chasing and steering the animals (Manembu 1991; Flannery 1995).

Traditional hunting practices are more likely to be sustainable, especially when part of the repertoire of human groups who have lived for millennia in tropical forests (Robinson & Bennett, 2000). But hunting practices are changing, and generally these changes decrease the probability that hunting will be sustainable. In western Tanzania, Carpaneto and Fusari (2000) found subsistence hunting using guns killed most mammals (127 or 53.81%), while reminder were captured using other techniques: traps (45 or 19.06%), dogs (38 or 16.1%) and spears (26 or 11.01%).

Corlett (2007) discovered that hunters who had greater access to advanced technologies like guns and flashlights were more often shifting to unselective traps and snares, which usually entails less time away from work than active hunting (Lee 2000). According to Sillitoe (2002), while any method may catch a range of animals, there is a trend for certain ones to fall to certain tactics. This relates predictably to the behaviour of animals and the appropriateness of methods used to catch them.

HUNTING TENURES

It was common in most areas in West Papua, the villagers have no doubt that there are sacred places in the forest, and they are not allowed to hunt in the sacred place. This practice is pass down by the past ancestors and presently still put into practice. The belief being applied is this particular place should be protected and could not be disturbed because it was served as the place of the departed spirit of the ancestors.

However, there is common to find that hunting is usually restricted to areas belonging to the clan. In this case, people who are not belong to the clan or outsiders have to get permit from landowners and share the results with landowners of the forest/places. With regards to land or forest resource system, family/tribe that has the right on the land reserved particular place as sacred place. Hunting is not allowed in this area, because it serves as a place for the departed spirits. They believe that if someone broke the regulation he will be unlucky. Wanggai and Kilmaskossu (1995) stated that traditional right usually belonging to the clan/tribe in the forest is the territory area of hunting to local communities in the remote area of West Papua.

Sillitoe (2002) put forward that in Papua New Guinea, indigenous people, regulate hunting access to forest, of which *sem* (kin composed group) members are jointly custodians and rightful users. They are common resources to which all have equal access. Men can only hunt legitimately on *sem* territories where they reside or where residents elsewhere recognise them as rightful kin. Madhusudan and Karanth (2002) also insisted that sacred forest (naagabana) in India was prohibited for hunting.

HUNTING SEASONS

Most popular in the coastal area of Cenderawasih Bay, where the practice of fishing, harvesting and hunting are seasonally banning called “sasi”. Time for fishing, harvesting and hunting usually starting by traditional ceremonial and during the season activity all villagers are allowed to collect their harvest. The belief is the activity should be done in the first two months because the harvest is in the highest quality. However, in Wasur, sasi is being practiced in related to the death of clan member.

In particular occasion (activity related to the religious or cultural aspect), all men in the tribe were involved in hunting activity. The activity was conducted for a certain period of time (one to two weeks). This also sometimes acknowledged as hunting season when they were forcing to hunt for a big number of wild animals.

Though it was not widely practiced among the ethnic groups, practicing “sasi” during particular closed season was regulated and hunting activities were not allowed, and this was also considered as traditional conservation wisdom still practices in some parts in Papua. Ntiamoa-Baidu (1997) also explained that the same practice is commonly found throughout African regions. For example, the closed season for forest snails was strictly enforced in most Ashanti villages at the beginning of the snail season when they were laying eggs. The town crier would inform the community of the ban on snail collection. This aims to allow hatching and growth of young snails, and strictly adhere to until the season is opened by another announcement from the town crier.

GAME SPECIES PREFERENCES

Hunted animal varies from one site to another site. However, wildlife species being hunted in West Papua were generally similar. For example, terrestrial mammals and birds were the most commonly hunted. Some recognized target animals: wild pig, deer, wallaby, cassowary, crowned pigeon, other birds, cuscus, bandicoot, crocodile, and turtle.

Among these animals, wild pig and deer are the most commonly hunted in all study sites. This is because of these species are widely distributed in West Papua. Crocodile and turtle are mostly hunted around coastal areas or wetland sites such as Mamberamo River Basin, and Wasur, Merauke. Other birds were considered depending on the presence of these species in the study sites.

It is important to note that choice of animals for hunting are depends on difficulty in catching them as well as the economic values of a species in each study site. People in Cenderawasih Bay, for instance, usually sell wild boar meat, but in certain occasions, meat of cassowary is also wide offered especially to Moslem communities who do not eat pork.

There are certain beliefs or practices that were deliberately designed for conserving wildlife but undoubtedly have incidental effects on conservation, and they involve a variety of species and traditions. It is commonly practice in almost study sites and found applicable presently. In Teminabuan district for instance, people are prohibiting to kill cockatoos. Killing those birds would have negative impact to hunters, like lose their skills in war, or they could get accident.

Another tribe in Kebar Highland were not interested using dog in hunting, because they are not allow to eat catch results killed by dog. They believe something would happen (sickness, accidents) if they ate the catch results killed by dog. Contrary to the previous explanation particular birds with beautiful plumage (birds of paradise, Victoria crown pigeon) are not killed for their plumes because people acquire them as symbol, emblem or totem to their tribe, so those birds are conserved indirectly.

The preference of species being hunted varies according to regions depending mainly on available species and also on hunting restrictions enforced in each county. Some studies have recognized different reasons in species chosen for hunting. This is significantly

correlated to biomass yield and economic value combining both market and subsistence value (Bodmer 1995; Escamila *et al.* 2000; Fa *et al*. 2000; Peres 2000; Madhusudan and Karanth 2002).

Due to the purpose of hunting was mainly for subsistence and commerce species preference was diverse from birds, mammals and reptiles (Bennett and Robinson 2000). The preference for large body size animals suggests that hunters want to maximize meat yields to gain more commercial benefits (Bodmer 1995). In India, "large mammals" (weighing more than 1 kg) are mostly hunted and attracted hunters because of biomass yield and commercially valuable by-products such as hide, horn, and bone (Madhusudan and Karanth 2002).

The presence of particular species closer to human tenancy was also found as the reason why they are becoming a hunting target. Cassowary hunting in Merauke for example, is rarely done because it is difficult to catch and decrease in population number (Chahya 2000). Madhusudan and Karanth (2002) encountered that chital and wild pig were the most commonly hunted since these species do occur close to human habitation.

With regards to social, psychological and ritual importance, some wild animals are being used in specific cultural rites and festivals, either in the rituals or in the preparation in ceremonies (Ntiamoa-Baidu 1997). For example, morga ceremony in the highland areas of Papua New Guinea requires a large number of pig and cassowary for a cultural-exchange and establishing friendship among the tribes (Kwapena 1984). Moreover, the use of wild animal species (mammals, birds and reptiles), which include the meat, hair, skin, tail, bones, teeth, fat, glands and faecal pellets are widely applied in Africa to cure mental and physical illnesses (Ntiamoa-Baidu 1997).

Some literatures McKinnon (1984); Beehler (1985); Petocz (1994); Wibowo and Suyatno (1998) indicated that hunting activities by local community in Papua is important to catch animals for food and display material for traditional costume. The use of birds' plumage (Birds of paradise) for example is always being practiced on traditional ceremony especially for decorations in their display of traditional colorful costume. It is also important to notice that species preference differed since there is a shift from subsistence to commercial purpose (Escamila et al 2000).

Research by Hames and Vickers (1983) as reported by Naranjo et al (2004) showed that the preferences of subsistence hunters for different wildlife species are usually influenced by their main economic activity, access to domestic meat, ethnic origin, geographical isolation, local wildlife availability, and the biological attributes of species. In addition, other factors have also influenced the hunting prey preference such as such as the social, cultural and political characteristics among ethnic groups. Therefore, ethnic identity was also considered a potential factor influencing selection of hunting target (Fa *et al.* 2002).

CHALLENGES FOR THE FUTURE

The reliance of human on wildlife can affect wildlife harvest because of increasing in harvest rates, and may contribute significantly to the decrease of wildlife population. Some facts in field showed that increase human population in the rural areas, tended to increase hunting pressure on wildlife populations. Another factor that can affect hunting is the established road networks. The spatial analysis showed that new road connection will reach 2,700km and about 25% of protected areas in Papua located less than 20km from the established road connection (Anggraeni & Watopa 2004). Road access not only brought hunters closer to the hunting sources, but also linked the resources directly to the market (Robinson *et al*. 1999).

Shifting from traditional hunting weapons to the modern ones is also identified as factor that can affect hunting. Access to the available air rifle in towns allow hunters to become familiar with advanced hunting techniques that make hunting more efficient and can affect harvest rates as well as wildlife populations. Along with the province development, previous inaccessible forest's areas is now opened through available road access, creates more interaction between locals and new comers and influence the practice of traditional taboos that currently erode and affect hunting and has impacts on wildlife populations.

Compared to the temperate countries, hunting in tropical forest is rarely managed, due to the belief that hunting has been a traditional part of rural economies, and indigenous cultures in the tropics so it has been sustainable. However, it seems that hunting is not sustainable anymore. Modern hunting replace the traditional hunting by using guns, and commercial hunters from outside local areas come to hunt for meat, trophy, skin and often make transaction with local hunter.

Therefore, the sustainable-use approach is based on assumptions that it is necessary to reconcile hunting with wildlife conservation. This means the extraction of a resource can be regulated or when referred to the reinforcement of the traditional conservation wisdom, it is more emphasizing on user-restraint on resource extraction.

Traditional regulation as control measures in conserving wildlife and its habitat should be supported by established particular wildlife legislation. Serious attention should be given through the collaborative working of the government, NGOs, and all stakeholders to support the wildlife conservation. Furthermore, institutions to manage wildlife will also to be strengthened through the government-initiated management programs for the purpose of wildlife sustainable.

REFERENCES

Anggraeni, D. & Y. Watopa. 2004. Kajian singkat Konservasi dan Ekonomi (RACE). Suatu usaha untuk memadukan kepentingan konservasi dan pembangunan ekonomi di Tanah Papua. Conservation International Indonesia. 91 pp.

Beehler, B. 1985. Conservation of New Guinea Rainforest Birds. ICBP Technique Publication No. 4, 1985 pp. 233-247.

Bennett, E.L. & J.G. Robinson. 2000. Hunting of wildlife in tropical forest: implications for biodiversity and forest peoples. Paper No. 76 on Biodiversity series – impact studies. World Bank and WCS, Washington DC, USA.

Bodmer, R.E. 1995. Managing Amazonian Wildlife: biological correlates of game choice by detribalized hunters. Ecological Applications 5(4), pp. 872-877.

Carpaneto, G.M & A. Fusari (2000). Subsistence hunting and bushmeat exploitation in central-western Tanzania. Biodiversity and Conservation 9: 1571–1585.

Chahya, D.N. 2000. Teknologi berburu Rusa (Cervus timorensis) dan Kasuari (Casuarius, sp.) secara tradisional pada masyarakat Suku Marind dan Kanuum di dalam kawasan Taman Nasional Wasur Merauke. BS Thesis Universitas Negeri Papua, Manokwari.

Corlett, R.T. 2007. The impact of hunting on the mammalian fauna of Tropical Asian Forests. BIOTROPICA 39(3): 292–303.

de Vos, A. 1973. Wildlife production in Africa. Pages 67-72 in R.L. Reid, editor. Proceedings of the III World Conference on Animal Production. University of Melbourne Australia.

Escamila, A., M. Sanvicente, M. Sosa & C. Galindo-Leal. 2000. Habitat mosaic, wildlife availability, and hunting in the tropical forest of Calakmul, Mexico. Conservation Biology 14 (6): 1592-1601.

Fa, J.E., J.E. Garcia Y. Yuste & D. Castelo. 2000. Bushmeat markets on Bioko Island as measure of hunting pressure. Conservation Biology 14 (6); 1602-1613.

Fa, J.E., C.A. Peres, & J. Meeuwig. 2002. Bushmeat exploitation in tropical forests: an intercontinental comparison. *Conservation Biology* 16: 232-237.

Fa, J.E. & D. Brown. 2009. Impacts of hunting on mammals in African tropical moist forests: a review and synthesis. Mammal Rev Vol. 39 (4): 231-264

[FAO] Food and Agriculture Organization. 1996. Forestry and food security, by H. Gillman & N. Hart. Rome.

Flannery, T. 1995. Irian Jaya's New Tree Kangaroo: Just the tip of the Ertzberg. Nature Australia Winter pp. 47-52

Hoskins, M. 1990. The contribution of forestry to food security. Unasylva No. 160(41): 3-13.

Kwapena, N. 1984. Traditional conservation and utilization of wildlife in Papua New Guinea, The Environmentalist 4(7, Supplement): 22-26

Lee, R.J., 2000. Impact of subsistence hunting in North Sulawesi, Indonesia and conservation options. In: Robinson, J.G., Bennett, E.L. (Eds.), Hunting for Sustainability in Tropical Forests. Columbia University Press, New York, pp. 455–472.

Mac Kinnon, K. 1984. Alam Asli Indonesia Flora, Fauna dan Keserasian. PT Gramedia Jakarta. (In Indonesian).

Madhusudan, M.D. & K.U. Karanth, 2002. Local hunting and the conservation of large mammals in India. Ambio 3(1): 49-54

Manembu, N.A. 1991. Suku Sempan, Nakai, Nduga dan Amungme di Kawasan Lorentz. PHPA/WWF Project 4521. Jayapura.

Milner-Gulland, E.J., E. Bennett & the SCB 2002 Annual Meeting Wild Meat Group. 2003. Wild meat: the bigger picture. TRENDS in Ecology and Evolution Vol.18 (7): 351-357.

Naranjo, E.J., M.M. Guerra, R.E. Bodmer & J.E. Bolaños. 2004. Subsitence hunting by three ethnic groups of the Lacandon Forest, Mexico. Journal of Ethnobiology 24(2): 233-253.

Ntiamoa-Baidu, Y. 1997 Wildlife & Food Security in Africa, FAO Conservation Guide 33 www.fao.org/docrep/W7540E.

Ojasti, J. 1996. Wildlife Utilization in Latin America: Current Situation and Prospects for Sustainable Management. (FAO Conservation Guide - 25), FAO Rome. Retrieved January 20, 2004 from http://www.fao.org

Paijmans, K. (Editor). 1976. New Guinea vegetation. The Australian National University Press, Canberra

Pattiselanno, F. 2003. The wildlife value: example from West Papua, Indonesia. Tigerpaper 30 (1): 27-29

Pattiselanno, F. 2004. Wildlife utilization and food security in West Papua, Indonesia Paper presented on the SEARCA Agriculture and Development Seminar Series, SEARCA Los Baños 13 April 2004

Pattiselanno, F. 2006. The wildlife hunting in Papua. *Biota, XI,* 59-61.

Pattiselanno, F. 2007. Cuscus (*Phalangeridae*) hunting by Napan communities at Ratewi Island, Nabire, Papua. *Biodiversitas, 8,* 274-278.

Pattiselanno, F. 2008. Man-wildlife interaction: Undertstanding the concept of conservation ethics in Papua. *Tigerpaper, 35,* 10-12.

Pattiselanno, F. & G. Mentansan. 2010. The practice of traditional wisdom in wildlife hunting by Maybrat ethnic group to support wildlife sustainable in Sorong Selatan Regency. Makara Sosial Humaniora Vol. 14 (2): 75-82.

Petocz, R.G. 1994. Mamalia darat Irian Jaya. WWF Indonesia Programme dan PT. Gramedia Pustaka Utama Jakarta.

Peres, C.A. 2000. Evaluating the impact and sustainability of subsistence hunting at multiple Amazonian forest sites, In J.G. Robinson and E.L. Bennett (eds.). Hunting for sustainability in tropical forest. New York: Columbia University Press: pp. 31-

Rao, M. & P.J.K. McGowan. 2002. Wild-meat use, food security, livelihoods, and conservation. Conservation Biology Vol. 16 (3): 580–583.

Robinson, J.G., K.H. Redford & E.L. Bennett. 1999. Wildlife harvest in logged tropical forests. Science Vol. 284: 595-596.

Sillitoe, P. 2002. Always been farmer-foragers? Hunting and gathering in the Papua New Guinea Highlands. Anthropological Forum Vol. 12 (1): 45-76.

Wanggai F. & M. St. E. Kilmaskossu. 1995. Partisipasi masyarakat dalam kegiatan konservasi Taman Nasional Laut Teluk Cenderawasih. Makalah Rapat Koordinasi Pembangunan Taman Nasional Laut Teluk Cenderawasih. Manokwari, 30 September1999.

Wibowo, P. & N. Suyatno, 1998. An overview Indonesian Wetland Sites II. Directorate General of Forest Protection and Nature Conservation and Wetlands International Indonesia Programme.

Williamson, D. 2002. Wild Meat, Food Security and Forest Conservation. In Mainka, S.A. M. Trivedi (Eds). *Links between Biodiversity Conservation, Livelihoods and Food Security: The sustainable use of wild species for meat.* IUCN Gland, Switzerland, and Cambridge, UK. Pp 19-22.